Program Executive Office Command, Control, Communications, Computers and Intelligence (PEO C4I)

PEO C4I Strategy for Supporting the Global Maritime Force

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Outline

- PEO C4I Overview
- Open Architecture Technical Strategy
  - Comms
  - Networks
  - Applications
- Open Architecture Business Model
- Coalition Programs

PEO C4I
Vision and Mission

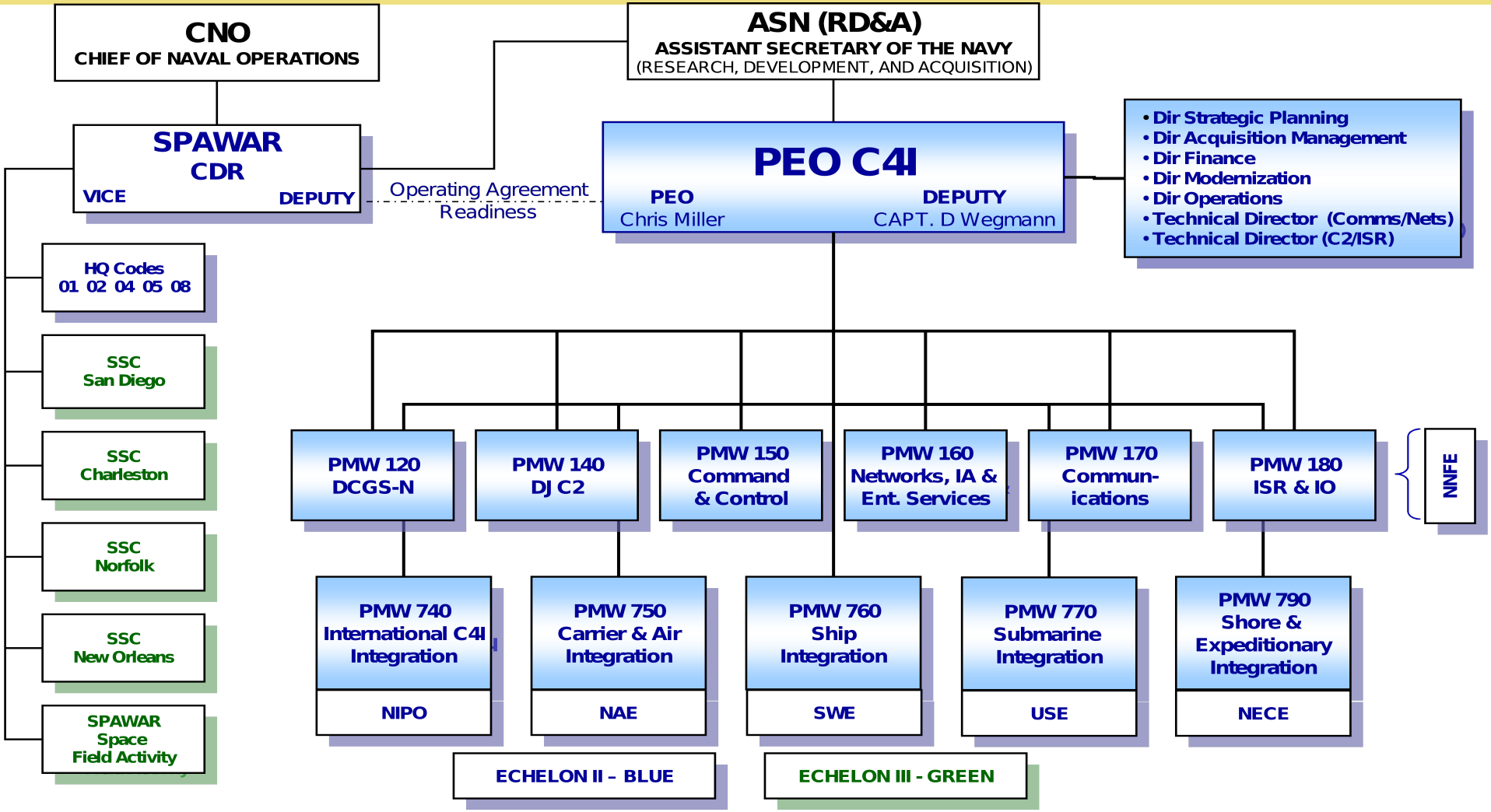
Vision: ***Be the Preeminent Provider of Transformational Network centric Warfare Capability Enabling Decision Superiority***

Mission: Acquire, Integrate, Deliver and Support Interoperable C4I & Space Capabilities Enabling Seamless Operations for Fleet, Joint and Coalition Warfighters

- **Responsible for acquiring and sustaining Navy C4I capability from "cradle-to-grave"**
- **Report directly to Service Acquisition Executive**
- **Oversight of 149 C4I programs/products**
- **Budget authority of ~ $1.5B**
- **Streamlined staff/disciplined execution**
- **Transforming acquisition**

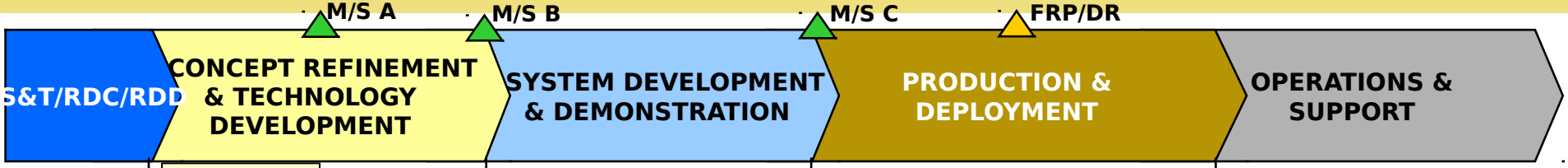
We Don't Build Platforms, We Make Them

PEO C4I
Organizational Alignment



Acquisition Alignment to Meet Warfighter

PEO C4I
ACAT Programs



RDC
- AIS
- SNR/ HF-IP
- CBSP
- EMIO

S&T
- CSD
- CMA

RDD
- **MDA**

- ISNS Inc II
- DCGS 2.0

Pre Acquisition
- AdvHDR
- AN/WRN-X
- CENTRIXS-M
- CND
- DIO-S
- FMQ-17
- LBS, F&I
- LBUCS
- METMF(R) NEXGEN
- NC3LTS
- NAVWAR Sea PH 2
- TC

ACAT IC
- NMT

ACAT II
- CLIP
- DCGS-N 1.0

ACAT III
- ADNS Inc III
- SSEE Inc F

ACAT IVM
- TSw Inc II

ACAT IAC
- GCCS-M 4.0
- NTCSS

ACAT II
- C2P
- CSRR
- ISNS Inc I
- SHF

ACAT III
- ADNS Inc I & II
- DMR
- GBS
- NAVWAR Sea PH 1A & 1B
- OE-538/BRC
- SSEE Inc E
- SubHDR
- SubLAN Inc I
- TacMobile

ACAT IAM
- DJC2

ACAT IVM
- TSw Inc I

ACAT IVT
- JMINI
- NAVSSI
- SMQ-11

AAP
- CCOP/DRT
- EPLRS- DR
- HITS
- KG-40AR
- MLCS
- Portable Radios
- SAMS-NT
- SubOpAuth
- TFDS
- TRIDENT IP
- VIXS

ACAT IAC
- GCCS-M 3.0

ACAT IC
- NESP

ACAT III
- BGPHES-ST
- CDL-N Inc I
- COBLU
- CWSP
- HFRG
- INMARSAT
- JCDX
- Mini-Dama
- SCI NETWORKS
- SINCGARS

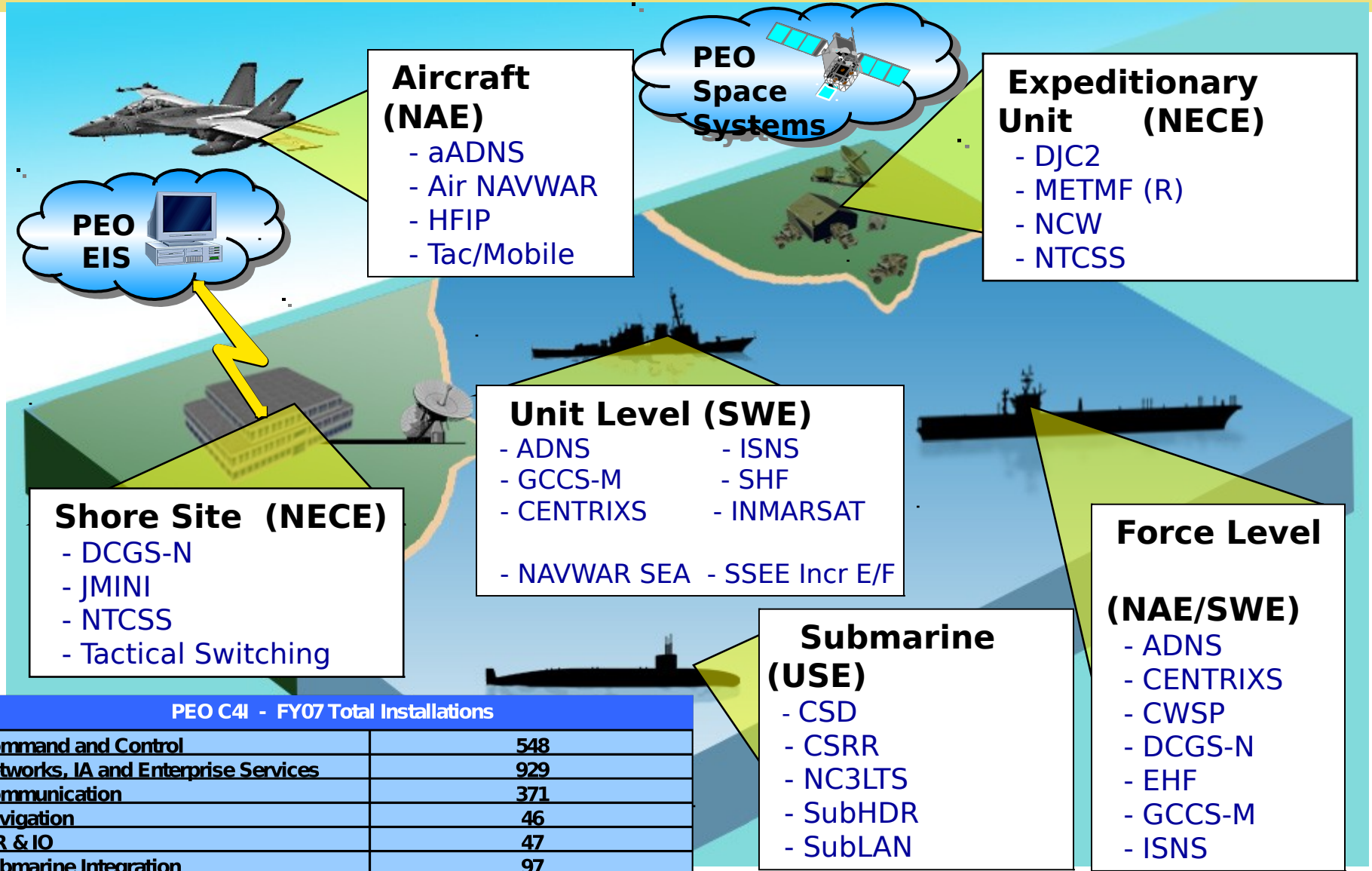
ACAT IVM
- DWTS
- TV-DTS

ACAT IVT
- BFEM 66
- METMF(R)
- NAVMACS II/SMS
- NITES2000/NITES IP

Programs Assigned: 149			
ACAT IC	2	ACAT III	28
ACAT IAM	4	ACAT IVM	3
ACAT IAC	3	ACAT IVT	7
ACAT II	6	NON ACAT/AAPs	96

- **Color highlights indicate incremental acquisition of programs**
- **Not included above: 59 Non-ACAT & 12 Programs managed by other services**

PEO C4I Products Delivered
FY07 Snapshot



PEO C4I - FY07 Total Installations	
Command and Control	548
Networks, IA and Enterprise Services	929
Communication	371
Navigation	46
ISR & IO	47
Submarine Integration	97
Total	2038

Commercial Trends

- Network as a platform
- Collaborative decision making
- Data is the new “Intel Inside”
- Standardization to maximize returns
- Data Center Consolidation

Google™

Navy C4I needs to adopt commercial trends

The Power of the Network…

Navy Opportunities

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navy fun
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From: swampfox3030
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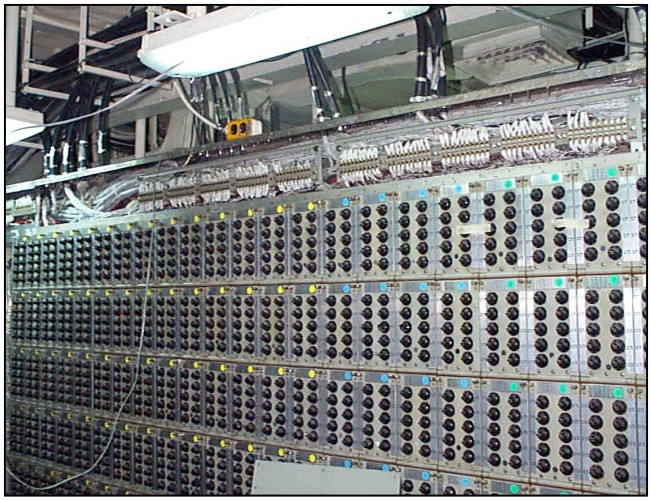
Royal Navy does Queen's Bohemian Rhapsody
05:50

Current State of Navy C4I

- We've lost C4I agility and responsiveness
- Some SCN platforms developing own shipboard computing environments

Fiber Optic Junction Box



Switchboards & Patch Panels

- One waveform, one radio
- Lengthy fielding timelines to replace legacy systems
- Deployed bandwidth per sailor is less than a cell phone

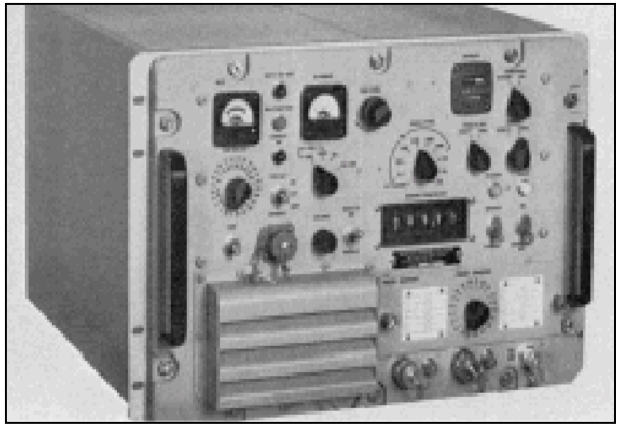
We Need to Change our Business and Technical Approach to Keep Pace

Current State of Navy C4I (cont)

NAVMACS Suite

- **Average time to market:** 2-3 years for new capabilities
- **Average server age:** 3+ years ISNS, 7+ years GCCS-M
- **Average network age:** 6.7 years
- **Network FOC Timeline:** 4-9 years (in some cases with no refresh)

- **Fielded comms systems:**
  - 874 Variants
  - Over 30,000 radios / comms equipment installed in the fleet
  - Aging legacy radios (e.g., WSC-3), over 30 years old



WSC-3 UHF SATCOM
and LoS Transceiver

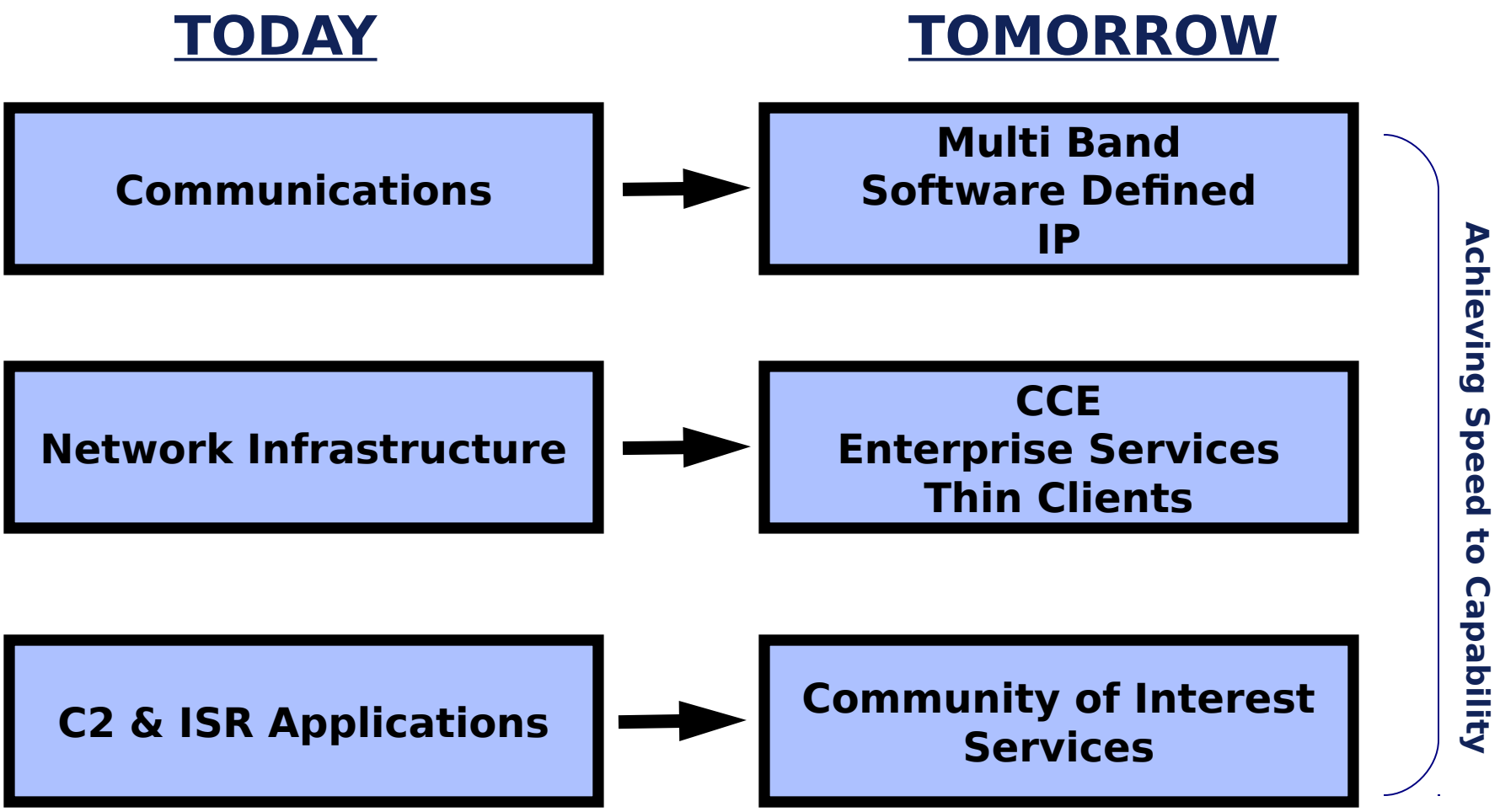
ISNS – Integrated Shipboard Network System
GCCS-M – Global Command and Control System – Maritime
FOC – Full Operational Capability

PEO C4I Open Architecture Goal and Objectives

- GOAL - Provide an agile integrated C4I capability
  - More responsive to Fleet readiness requirements (Man/Train/Equip)
  - Increased supportability and standardization (Sea Basing / Sea Swap)
  - Increased system interoperability and network security
  - Increased joint alignment
- OBJECTIVES:
  - Reduce applications, reduce servers, increase server utilization
  - Transform application programs into community of interest service providers
  - Increase bandwidth utilization and capacity
  - Implement a C4I rapid capability process based on ARCI model
  - Capitalize on acquisition innovation

Capture And Reinvest Our C4I Investments Into Capabiliti

PEO C4I Open Architecture (OA) Migration Strategy

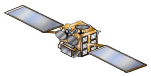


IP – Internet Protocol
CCE – Common Computing Environment
C2 – Command and Control
ISR – Intelligence, Surveillance & Reconnaissance

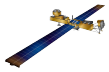
Satellite Communications (SATCOM) Migration

NES P

GBS



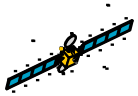
DSCS / DSCS SLEP



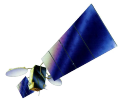
MILSTAR

UFO

WSC-6



INTELSAT



INMARSAT

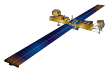
WSC-8

Inmarsat

MILSATCOM

Commercial SATCOM

NMT



AEHF

WGS

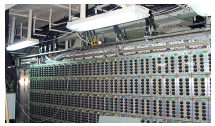
Commercial Satellites

CBSP

NMT – Navy Multi-band Terminal
CBSP – Commercial Broadband Satellite Progra

Pursuing Integrated MILSATCOM & Commercial Solutions

Tactical Communications Migration

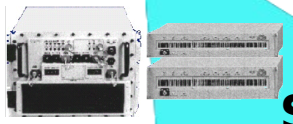

Switchboards


TSS

Switching


WSC-3


DAMA


Mini-DAMA

UHF SATCOM


URT-23

SRA/56-58

SRA-49


HFRG


URC-109

HF


WSC-3


DMR


ARC-210

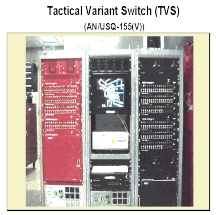
LOS


DWTS


SINCGARS

BISOG

847 Equipment Variants
5,216 Radios Fielded
26,264 Ancillary Items



TVS

DMR

JTRS AM/F
Limited Preferred Products

DMR – Digital Modular Radio
JTRS – Joint Tactical Radio System
LOS – Line-of-Sight
BISOG – Blue in Support of Green

Reducing Radio Variants and Footprint

Network Infrastructure Migration Strategy

Legacy Voice

SCI LAN

VoIP

ENSER LAN (GCCS-M)

ISNS

UNCLAS LAN (NTCSS)

Consolidated Afloat Networks and Enterprise Services (CANES)

SVDS

CENTRIXS

HM&E

Routing/Net Mgmt

SCI ADNS

ENSER ADNS

ADNS

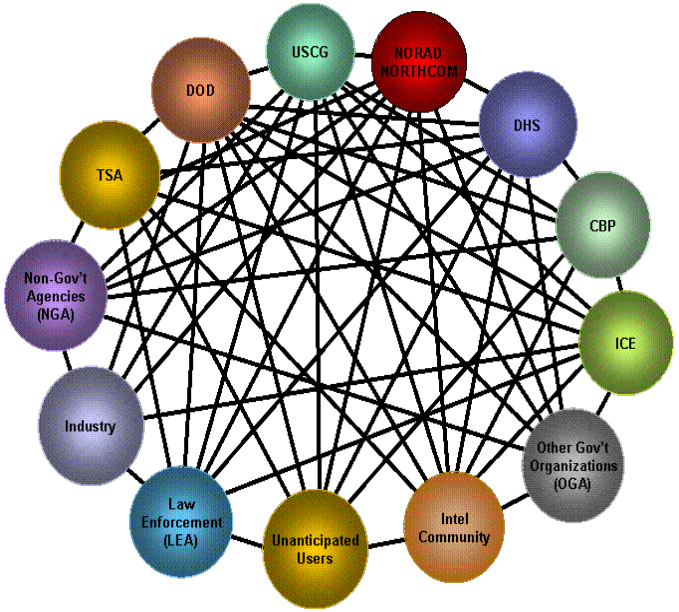
EMS

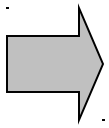
RF Mgmt/ Multiple xing

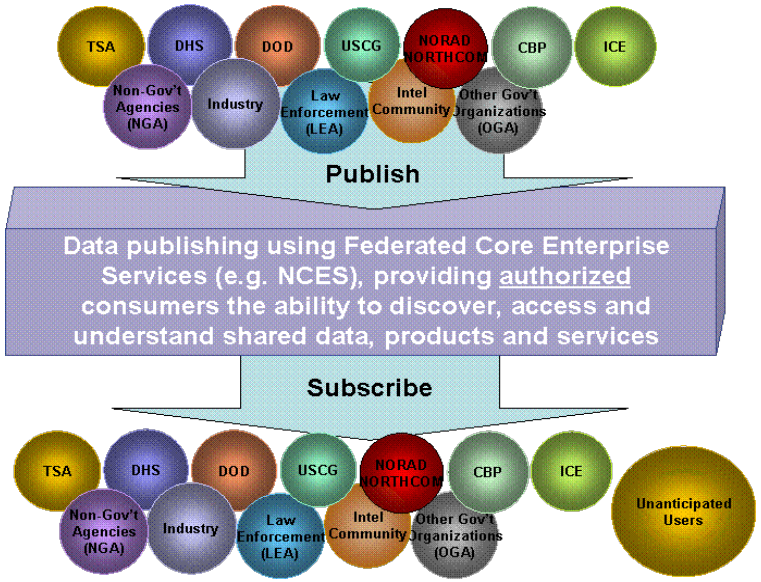
ADNS Incr III

ADNS – Automated Digital Network System
SVDS – Shipboard Video Distribution System
EMS – Element Management System
VoIP – Voice Over IP
NTCSS – Naval Tactical Command Support System

Potential Results of Migrating Applications to OA Architecture







- Point-to-point data sharing
- Not extensible, agile or flexible
- High cost and complexity

- Net-Centric data sharing
- Decoupled data publishers and consumers
- Extensible, flexible and responsive

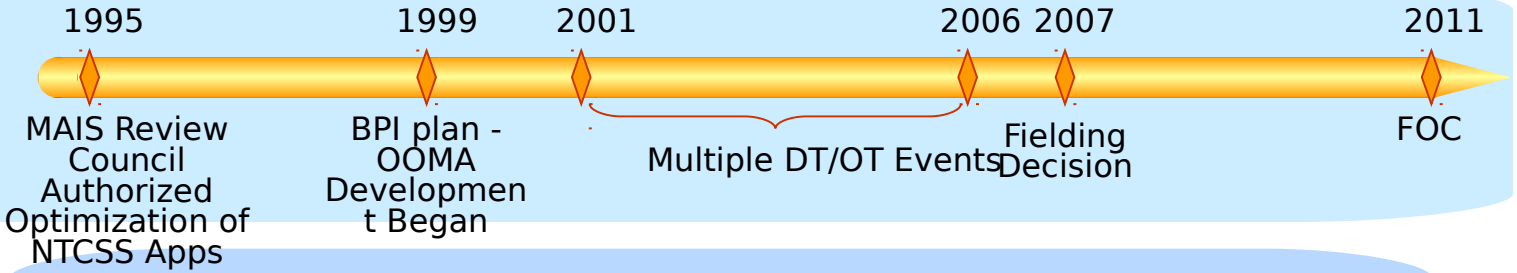
Facilitating faster, incremental capability delivery

Changing our C4I Business Model

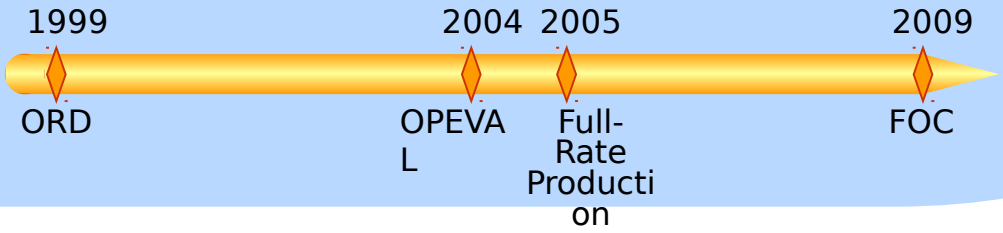
Today	Tomorrow
Large acquisition programs delivering hardware and software	Smaller COI services programs; separation of hardware and software
Integration occurs at Fleet installations	Integration occurs in E2E test lab
Limited code reuse	Software repository and collaborative development model
Individual program DT/OT events	Distributed FDCE-like process
Lack of platform baselines	Integrated platform C4I delivery
Limited competition	Best of breed process

Facilitating Application Speed to Capability

OOMA
- Client-Server
- Multiple Tests/Certs
- ACAT I Program



GCCS-M 4.0
- Client-Server
- Multiple Tests/Certs
- Interdependencies

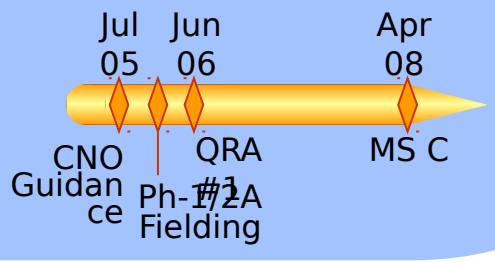


Rapid

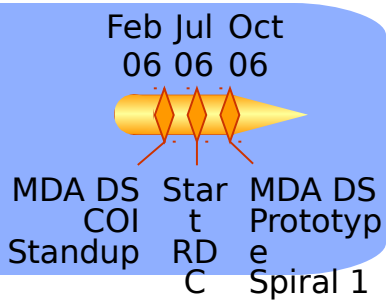
Capability

Insertion

AIS
- RDC Approach
- Reused ONR Software
- Initial Delivery < 2 Years



MDA DS COI
- Initial Delivery < 5 Mths
- Less Than $500k
- Accessible Via Browser



Coalition Comms and Networks Efforts

High Frequency Internet Protocol (HFIP)

- Rapid Deployment Capability (RDC) providing Beyond Line of Sight (HF) communication path enabling warfighters on a coalition or US Secret network to execute and plan in a tactical environment

Sub-Net Relay (SNR)

- Rapid Deployment Capability (RDC) providing line of sight (UHF) communications path enabling warfighters on a coalition or US Secret network to execute and plan in a tactical environment

Combined Enterprise Regional Information Exchange System (CENTRIX)

- CENTRIXS supports coalition interoperability and information exchange and provides core data services including Secure E-Mail, Web Replication, Chat, and COP at the Secret-Releasable Level

C4I Network Centric Axioms

- Open Systems Succeed; Proprietary systems fail
- Separation of logical layers is necessary for open systems
- Standards are necessary but not sufficient
- The power of the network is proportional to the number of nodes on the network
- Technology is an enabler – not a problem or silver bullet
- “Better than” is the enemy of “good enough”

ax·i·om *[**ak**-see-uh m]*
–noun
1. A self-evident truth that requires no proof.
2. A universally accepted principle or rule.

Questions?